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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,347	01/29/2004	Manfred Albrecht	ARC920030091US1	7410

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EXAMINER	
RICKMAN, HOLLY C	
ART UNIT	PAPER NUMBER
1773	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/768,347	ALBRECHT ET AL.	
	Examiner	Art Unit	
	Holly Rickman	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-25 and 27-29* is/are pending in the application.

4a) Of the above claim(s) *9,10 and 17-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-8,11-16,23-25,27-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The rejection of claims 6 and 26 under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ravelosona-Ramasitera et al. (US 6605321) is withdrawn in view of the cancellation of these claims.

4. Claims 1-5, 8, 11, 14-16, 23-25, and 28-29 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ravelosona-Ramasitera et al. (US 6605321).

Ravelosona-Ramasitera et al. disclose a method of treating a material by irradiating with ions such as He+. The irradiation orders the material thereby enhancing the magnetic anisotropy of the materials and providing magnetic grains that are ferromagnetic. The reference teaches low energy ions having an energy on the order of one hundred keV is suitable for use in the invention. An irradiating particle density of 5x10E15 to 4x10E16 is suitable for us in the invention. (see col. 2, lines 3-61).

The reference does not explicitly state that the irradiation process induces "exchange coupling between grains" as required by the present claims. However, the examiner contends that this is an inherent feature of the reference. The reference teaches that the magnetic anisotropy of the film is "perfectly homogeneous" which indicates that grains are uniformly transformed into a ferromagnetic material (col. 6, lines 45-49). Because these grains are adjacent to one another and formed by substantially the same method as claimed, one of ordinary skill in the art would expect them to exhibit ferromagnetic exchange coupling.

It has been held that where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC §102 or on prima facie obviousness under 35 USC §103, jointly or alternatively. *In re Best, Bolton, and Shaw*, 195 USPQ 430. (CCPA 1977).

5. The rejection of claims 1-3, 8, 14 and 16 under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fullerton et al. (US 6383597) is withdrawn in view of Applicant's amendments and arguments.

Fullerton et al. fails to teach or suggest the limitation of claim 1 requiring irradiating the magnetic medium with ions having an acceleration voltage of 10-100 keV.

Claim Rejections - 35 USC § 103

6. Claims 7 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravelosona-Ramasitera et al. (US 6605321).

Ravelosona-Ramasitera et al. disclose all of the limitations of the claims as detailed above except for the claimed acceleration voltage of 20-30 keV. The reference teaches an acceleration voltage on the order of 100 keV. However, the reference does teach that it is desirable to use "low energy ions" (col. 2, lines 7-14) and that the choice of particle energy can be adjusted in order to obtain low uniform displacement densities in the film (col. 4, lines 15-40). It is the examiners contention that it would have been an obvious matter of design choice to one of ordinary skill in the art to use a lower acceleration voltage based on the desired structural modifications of the irradiated material.

7. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravelosona-Ramasitera et al. in view of Baglin et al. (US 6331364).

Ravelosona-Ramasitera et al. (US 6605321) teach all of the limitations of the claims as set forth above except for the longitudinal magnetization of the medium or the magnetization in between perpendicular and longitudinal (i.e. between 0-90°).

Baglin et al. teach that it is known in the art to form FePt-type media having perpendicular magnetization, longitudinal magnetization or magnetization of less than 45 degrees (col. 6, line 65 to col. 7, line 8).

It would have been obvious to one of ordinary skill in the art to adjust the magnetization formed by the method disclosed by Ravelosona-Ramasitera et al. in accordance with the teachings of Baglin and the desired form of recording.

8. The rejection of claims 11-13 under 35 U.S.C. 103(a) as being unpatentable over Fullerton et al. in view of Baglin et al. (US 6331364) is withdrawn in view of Applicant's amendments and arguments.

Response to Arguments

9. Applicant's arguments filed 12/7/06 have been fully considered but they are not persuasive with regard to the rejections of the claims in view of Ravelosona-Ramasitera et al (alone and in combination with Baglin et al.).

Applicant argues that Ravelosona-Ramasitera fails to disclose or suggest that claimed feature of using an acceleration voltage of between 10-100 keV. As acknowledged by Applicant, the reference teaches using "low energy ions having an energy of the order of one or two hundred keV." (col. 2, lines 9-11 of Ravelosona-Ramasitera).

The examiner maintains the position that the disclosure in Ravelosona-Ramasitera of ions having energy "on the order of one...hundred keV" suggests a value of 100 keV which reads on the presently claimed value of 100 keV. With regard to claim 7, the examiner maintains the position of record that it would have been obvious to optimize the acceleration voltage taught by Ravelosona-Ramasitera for the reasons set forth in paragraph 6, above. Given the teaching in Ravelosona-Ramasitera (col. 4, lines 20-25) that optimization of irradiating element and its energy is obvious to control the structural modifications of the irradiated material, it is prima facie obvious to adjust the acceleration voltage of the claimed ions. As such, the burden is shifted to Applicant to establish that there is a patentable distinction between the broadly claimed range of 10-100 keV and the narrowed range of claim 7 requiring 20-30 keV.

Applicant further argues that Ravelosona-Ramasitera is silent with regard to the material property of exchange coupling. However, the examiner's position of record is that Ravelosona-Ramasitera inherently satisfies this feature of the claimed invention by virtue of the fact that it discloses substantially the same process of making the structure taught therein as used by Applicant. Thus, one of ordinary skill in the art would expect two structures produced by substantially the same methods to exhibit the same properties. Applicant's arguments do not address the examiner's arguments regarding inherence.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Holly Rickman
Primary Examiner
Art Unit 1773

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February 12, 2007